

Five Years of Mental Health Research in the *American Journal of Occupational Therapy*, 2009–2013

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MeSH TERMS

- mental health
- mental health services
- occupational therapy
- professional role
- research

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In the past 5 years, the number of research articles on occupational therapy in mental health published in the *American Journal of Occupational Therapy* has steadily declined. This article identifies the strengths and limitations of this body of research and provides directions for practitioners and researchers to enhance the profession's role as a valued mental health service provider.

Gutman, S. A., & Raphael-Greenfield, E. I. (2014). *Centennial Vision—Five years of mental health research in the American Journal of Occupational Therapy, 2009–2013*. *American Journal of Occupational Therapy*, 68, e21–e36. <http://dx.doi.org/10.5014/ajot.2014.010249>

Since 2009, the number of research articles on occupational therapy in the practice area of mental health published in the *American Journal of Occupational Therapy (AJOT)* has lagged behind the number of research articles on all other practice areas with the exception of work and industry (Table 1). With the growing body of psychoneuroimmunological research linking physical health to emotional well-being (Fletcher, Barnes, Broderick, & Klimas, 2012; Kiecolt-Glaser, 2009, 2010), and the increasingly frequent psychologically traumatic events occurring in society (e.g., school shootings, terrorism, natural disasters, war, homelessness), it is striking that the profession has not made greater strides in mental health service provision and research, despite calls for action issued by the American Occupational Therapy Association (2011) and the World Federation of Occupational Therapists (2011). The profession's declining presence in mental health practice and research is mirrored by the larger society's marginalization of mental health services over the past 60 yr or more (Mark, Levit, Vandivort-Warren, Buck, & Coffey, 2011)—a trend that will likely begin to reverse because society will no longer be able to ignore the psychosocial needs of military personnel and returning veterans, homeless families and children, citizens

experiencing homeland terrorism, and families experiencing school shootings and violence.

In the past 5 yr, *AJOT* published 31 research articles addressing (1) occupational therapy mental health intervention effectiveness, (2) the development and testing of occupational therapy mental health instruments, (3) client satisfaction with occupational therapy mental health services, (4) basic research examining the occupational performance of varying mental health populations, and (5) professional issues examining the profession's history and present status in mental health practice (Table 2).

Mental Health Intervention Effectiveness Studies

In the past 5 yr, occupational therapy researchers have increasingly responded to the profession's call to generate research evidence supporting the profession's services in all practice areas (Gutman, 2012). Occupational therapy researchers working in the mental health practice arena have responded to this call by publishing, of the 31 mental health articles appearing in *AJOT* between 2009 and 2011, 13 (41.93%) intervention effectiveness studies. Nine (69.23%) of these 13 studies were randomized controlled trials ($n = 5$) or

Table 1. Practice Areas Addressed in *American Journal of Occupational Therapy* Articles, 2009–2013

Practice Area	2013 (N = 71)		2012 (N = 80)		2011 (N = 75)		2010 (N = 82)		2009 (N = 62)	
	n	%	n	%	n	%	n	%	n	%
Rehabilitation, disability, and participation	16	22.53	25	31.25	20	26.67	31	37.80	25	40.32
Children and youth	28	39.43	33	41.25	22	29.33	26	31.70	18	29.03
Productive aging	14	19.71	16	20.00	12	16.00	19	23.17	4	6.45
Mental health	8	11.26	3	3.75	11	14.67	2	2.44	4	6.45
Work and industry	1	1.40	0	0	6	8.00	0	0	0	0
Health and wellness	0	0	1	1.25	2	2.67	1	1.22	6	9.68
No specific practice area	4	5.63	2	2.50	2	2.67	3	3.66	5	8.06

systematic reviews ($n = 4$) at Level I evidence. Two (15.38%) of the 13 were one-group pretest–posttest studies at Level II evidence, 1 (7.69%) was a multiple-baseline single-subject design at Level IV evidence, and 1 (7.69%) was a case report at Level V evidence. Although most of these studies addressed traditional mental health populations (i.e., schizophrenia, schizoaffective disorder, bipolar disorder), several studies addressed the psychosocial needs of non-traditional mental health populations. Chippendale and Bear-Lehman (2012) reported that a life review writing intervention reduced depression levels in older adults living in four separate residential facilities. Lysack, Lichtenberg, and Schneider (2011) found that a DVD instructional course for occupational therapists enhanced their ability to identify and address depression in geriatric clients. Both research teams identified the need for occupational therapy practitioners to become involved in mental health service provision for an aging population and generated evidence supporting the profession's role in this area (see Table 2).

Approximately one-third of all occupational therapists practice in the school system (AOTA, 2009), yet in the past 5 yr, few research studies were published in *AJOT* that addressed the effectiveness of occupational therapy services with children and youth with psychosocial deficits, behavioral management problems, or substance use or who are at risk for school dropout. The Gutman, Raphael-Greenfield, and Rao (2012) study was one of the first articles published in *AJOT* that assessed the effectiveness of an intervention designed to enhance social skills in ado-

lescents with autism spectrum disorder. A growing number of pediatric occupational therapy researchers have begun to demonstrate through research evidence that parental stress and psychosocial health should be addressed to best enhance children's emotional health. Bendixen et al. (2011) assessed the effect of a parent–child training program and determined that such training could reduce parental stress and enhance parents' management of their child's disability. In Case-Smith's (2013) systematic review of occupational therapy–related interventions to promote child emotional health, she found that interventions that helped parents obtain parenting skills and manage stress also served to enhance the emotional well-being of children. The need for occupational therapists to provide services for at-risk parents and children in the school system and primary practice is great. We must advocate for an expanded role in the school system and primary practice, market our unique services, and collect data on outcomes to support occupational therapy child and youth interventions beyond traditional sensory-motor skill development.

The wars in Iraq and Afghanistan have been the longest wars in U.S. history and have involved intensive ground engagements not seen since the Vietnam War. Although the war in Iraq has officially ended and the operation in Afghanistan is scheduled for completion by 2014, returning veterans and their families will experience the devastating effects of these wars for years as they attempt to reintegrate into their communities and resume disrupted roles. Posttraumatic stress disorder, depression, anxiety, acute

stress disorder, adjustment disorder, suicidal ideation, and the psychosocial deficits from head injury, spinal cord injury, and amputation are beginning to be identified as the most commonly occurring mental health disorders resulting from deployment and return home (Patzkowski, Rivera, Ficke, & Wenke, 2012). Society will feel the effects of such psychosocial problems in communities, schools, and health care systems as returning veterans and their families begin to face these challenges. The Stoller, Greuel, Cimini, Fowler, and Koomar (2012) study was the first randomized controlled trial published in *AJOT* that addressed the effectiveness of an occupational therapy intervention intended to reduce combat stress symptoms in deployed military personnel. As society is beginning to directly observe the psychosocial trauma of these wars on returning veterans and their families, more occupational therapy researchers are answering the call to generate research support for the effectiveness of interventions to help this population. In 2014, *AJOT* will publish a special issue on the role of occupational therapy with military personnel, returning veterans, and families (see Table 2).

Mental Health Instrument Development and Testing Studies

Seven (22.58%) of the 31 published mental health articles addressed the development and testing of assessments designed to evaluate occupational performance and participation. The assessments addressed in these studies were the Practical Skills Test (Chang, Helfrich, & Coster, 2013), Mental Health Recovery Measure (MHR; Chang, & Ailey, 2013), Recovery Assessment Scale (RAS; Hancock, Bundy, Honey, James, & Tamsett, 2011), Adolescent/Adult Sensory Profile (Rieke & Anderson, 2009), Evaluation of Social Interaction (Simmons, Griswold, & Berg, 2010; Søndergaard & Fisher, 2012), and the Allen Cognitive Level Screen (Su, Tsai, Su, Tang, & Tsai, 2011). Two instruments are self-report measures that attempt to capture clients' perceptions about their point in the recovery process (the MHR and RAS). The MHR and RAS

Table 2. Evidence Table of 31 Occupational Therapy Mental Health Studies Published in the *American Journal of Occupational Therapy*, 2009–2011

Author and Year	Study Objectives	Intervention and Outcome Measures			Results	Study Limitations
		Level/Design/Participants	Intervention Effectiveness	Outcome Measures		
Arbesman & Logsdon (2011)	To examine the research assessing occupational therapy interventions intended to enhance participation in paid and unpaid employment and supported education for adults with severe mental illness	Level I Systematic review of 46 studies examining occupational therapy–related interventions in the areas of supported employment and education	Supported employment Supported education	Participants in supported employment programs had higher employment rates and longer job duration than controls. Participants in supported employment also had higher levels of participation in postsecondary education and vocational training programs than controls.	Of the 46 studies, 9 did not use randomization and control. Although all the studies examined the effectiveness of intervention within the scope of occupational therapy, many studies examined interventions administered by other health care professionals. Several studies used outcome measures that did not directly address function.	
Bendixen et al. (2011)	To examine the differences in parental stress level after participation in a father–child intervention intended to promote the child’s social reciprocity	Level III One-group, pretest–posttest design <i>N</i> = 19 children with autism (18 boys, 1 girl; ages 3–8) and their parents	12-wk in-home father training intervention to promote the child’s communication and social reciprocity. After fathers received training, they trained mothers. • Parenting Stress Index Short Form • Family Adaptability and Cohesion Evaluation Scales II	At baseline, both fathers’ and mothers’ stress levels were high. At postintervention, fathers experienced a reduction in stress scores but not at a statistically significant level. Mothers experienced a statistically significant reduction in stress scores after intervention.	Generalizability of findings is limited by small sample size and lack of randomization and control.	
Bullock & Bannigan (2011)	To examine the research assessing the effectiveness of activity-based groups in the reduction of symptoms and improvement of community function in adults with severe mental illness	Level I Systematic review of 3 studies examining the effectiveness of occupational therapy activity-based group interventions with adults with severe mental illness	Occupational therapy activity based groups vs. verbally based groups	The three studies demonstrated that activity-based groups were more effective than verbally based groups for either symptom reduction or community function, but not both.	Results cannot be generalized because of the limited sample size. Each of the 3 studies reviewed had small sample size and used measures lacking reliability and validity.	
Case-Smith (2013)	To examine the effectiveness of occupational therapy–related interventions to promote the social–emotional development of infants and children with disabilities (birth–5 yr)	Level I Systematic review of 23 studies to examine the effectiveness of occupational therapy–related interventions in the promotion of social–emotional development in infants and children (birth–5 yr) with disabilities.	Interventions were divided into 5 categories: (1) touch-based interventions to enhance parent–infant bonding, (2) relationship-based interventions to enhance caregiver–child relationships, (3) joint attention interventions, (4) naturalistic preschool interventions to enhance peer engagement, and (5) instruction-based interventions to enhance appropriate social behaviors.	Although a range of interventions promoted social–emotional development in children with disabilities, the collective evidence was only able to provide low to moderate support for the effectiveness of the 5 intervention categories.	Evidence for intervention effectiveness was limited by many studies’ small sample sizes and lack of randomization and control.	

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Table 2. Evidence Table of 31 Occupational Therapy Mental Health Studies Published in the *American Journal of Occupational Therapy*, 2009–2011 (cont.)

Author and Year	Study Objectives	Level/Design/Participants	Intervention and Outcome Measures	Results	Study Limitations
Chan, Tsang, & Li (2009)	To determine whether integrated supported employment can effectively help an adult with severe mental illness to obtain and maintain employment	Level V Case report with follow-up at 3, 7, 11, and 15 mo <i>N</i> = 1 participant with severe mental illness	Integrated supported employment program that provides job placement and support and work-related social skills training <ul style="list-style-type: none"> • Vocational Social Skills Scale • Chinese Job Stress Coping Scale • Personal Wellbeing Index • Chinese General Self-Efficacy Scale 	Participant was able to obtain competitive employment after 7 mo of program participation. Participant maintained employment for 8 continuous months, at which time program participation was terminated. Improvement was noted in self-perception of job stress coping, personal well-being, and self-efficacy.	Small sample size Lack of follow-up beyond 8 mo job tenure
Chippendale & Bear-Lehman (2012)	To assess the effectiveness of a life review writing intervention on depression levels in older adults residing in 4 senior residences	Level I Randomized controlled trial <i>N</i> = 45 older adults ages ≥65 (treatment, <i>n</i> = 23; control, <i>n</i> = 22; 14 men, 31 women)	8-wk life review writing intervention provided in 90-min sessions 1×/wk. Sessions were conducted at the 4 separate senior residences. Data were collected at baseline and 1-wk postintervention. <ul style="list-style-type: none"> • Geriatric Depression Scale 	A statistically significant difference at postintervention existed between the treatment and control groups, with the treatment group experiencing a reduction in depression scores.	Generalizability is limited because of small sample size. Bias may have existed because the interventionist also administered posttest assessments. No follow-up data were collected to examine intervention effects over time.
Edgelow & Krupa (2011)	To assess the effectiveness of an occupational therapy intervention, Action Over Inertia, in increasing meaningful daily activity in community-dwelling adults with severe mental illness	Level I Randomized controlled study 24 community-dwelling adults with severe mental illness were enrolled; <i>N</i> = 18 completed program participation (control, <i>n</i> = 8; treatment, <i>n</i> = 10)	Action Over Inertia participants received 12-wk intervention; controls received standard community treatment. Outcomes collected at pretest and posttest. <ul style="list-style-type: none"> • 24-hr time diaries • Profiles of Occupational Engagement for People With Schizophrenia 	Participants in the treatment group showed a statistically significant increase in the amount of time engaged in activity vs. sleep compared with controls (<i>p</i> = .05). No statistically significant difference was found between groups on occupational engagement scores.	Small sample size Moderately high attrition rate No follow-up measures
Gibson, D'Amico, Jaffe, & Arbesman (2011)	To examine the research assessing the effectiveness of occupational therapy-related interventions addressing community reintegration and life role assumption in adults with severe mental illness	Level I Systematic review of 52 studies examining the effectiveness of occupational therapy-related interventions designed to improve community reintegration and normative life-role assumption in adults with severe mental illness	Interventions included programs that addressed <ul style="list-style-type: none"> • Social skills • IADLS • Neurocognitive function. 	Moderate to strong support was found for the effectiveness of interventions addressing social skills, IADLS, and cognitive performance.	Because little research has directly addressed intervention effectiveness supporting community reintegration and normative life role assumption in adults with mental illness, the authors examined studies addressing components of these recovery concepts. Although several of the 52 studies involved occupational therapy, many were deemed as being within the scope of occupational therapy

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Table 2. Evidence Table of 31 Occupational Therapy Mental Health Studies Published in the *American Journal of Occupational Therapy*, 2009–2011 (cont.)

Author and Year	Study Objectives	Level/Design/Participants	Intervention and Outcome Measures	Results	Study Limitations
Gutman, Kerner, Zombek, Dulek, & Ramsey (2009)	To assess the effectiveness of a supported education program for adults with psychiatric disability	Level I Randomized controlled study <i>N</i> = 46 participants with severe mental illness enrolled; 38 completed study (intervention, <i>n</i> = 21, control, <i>n</i> = 17)	Supported education program consisting of 12 classroom–lab modules held 2×/wk over 6 wk. Controls received treatment as usual. <ul style="list-style-type: none"> • 6-mo follow-up • Participants' Comfort With the Student Role Scale • Task Skills, Interpersonal Skills, and School Behavior Scales • Pre- and posttests for 12 modules • Participant Overall Satisfaction Scale 	Of the 21 intervention group participants, 16 completed the program. At 6-mo follow-up, 10 of the 16 had enrolled in school or job training, obtained employment, or were applying to school.	Small sample size Pre- and posttests for 12 modules did not have established psychometric properties. No follow-up beyond 6 mo
Gutman, Raphael-Greenfield, & Rao (2012)	To examine the effect of a motor-based role-play intervention on the social skills of adolescents with high-functioning ASD	Level IV Multiple-baseline single-subject ABA design <i>N</i> = 7 male adolescents with high-functioning ASD (ages 15–17)	7-wk intervention provided 1 ×/wk in three 3-mo phases over 1 yr. Intervention consisted of warm-up and role-play activities that facilitated the connection between motor behaviors and their underlying emotional meanings. Recording sheet used to measure frequency counts of targeted social skills	All 7 participants experienced statistically significant increases in the frequency of targeted social skills from baseline to follow-up probe with the greatest amount of learning occurring in Phase 1.	Results cannot be generalized because of small sample size, lack of randomization, and lack of psychometrically sound outcome measures.
Katz & Keren (2011)	To compare the effectiveness of 3 interventions designed to enhance executive function in ADLs	Level I Randomized controlled study of 3 interventions Adults with schizophrenia ages 22–38 (3 groups, <i>n</i> = 6 per group). 37 enrolled; 19 dropped out; 18 completed study.	6- to 8-wk intervention with assessment at pre- and postintervention and at 6 mo follow-up Participants randomly assigned to 1 of 3 intervention groups: 1. Occupational goals intervention: focused on ADL performance using cognitive strategies 2. Frontal–executive program: neurocognitive rehabilitation program based on cognitive shift, working memory, and planning using paper-and-pencil activities 3. Activity training approach: focused on ADL performance using activity-specific routines (control group)	No statistically significant difference was found between groups at postintervention. Within groups, all groups showed a statistically significant increase from pre- to postintervention (<i>p</i> = .05). No statistically significant difference was found between groups at 6-mo follow-up. Most participants maintained achieved gains.	Small sample size 50% dropout rate Short treatment duration Data collector was not blinded to group assignment.

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Table 2. Evidence Table of 31 Occupational Therapy Mental Health Studies Published in the American Journal of Occupational Therapy, 2009–2011 (cont.)

Author and Year	Study Objectives	Level/Design/Participants	Intervention and Outcome Measures	Results	Study Limitations
Lysack, Lichtenberg, & Schneider (2011)	To determine the effectiveness of a DVD professional education module designed to increase therapists' awareness of and attitudes about late-life depression and increase the frequency of therapists' discussion of depression with patients	Level III One-group pretest–posttest $N = 30$ occupational therapists from 3 separate sites	<ul style="list-style-type: none"> • Wisconsin Card Sorting Test • Wechsler Adult Intelligence Scale • Behavioral Assessment of the Dysexecutive Syndrome • Executive Function Performance Test • Routine Task Inventory–Expanded • Activity Card Sort • Reintegration to Normal Living Index 	A statistically significant change was found from pretest to posttest in the therapists' awareness and knowledge of late-life depression ($p = .05$). A statistically significant change was found from pretest to posttest in the amount of time therapists discussed depression with patients ($p = .05$).	No control group Possible overlap of patients during chart audit Outcome measures had no established psychometric properties.
Stoller, Greuel, Cimini, Fowler, & Koomar (2012)	To determine the effectiveness of a sensory-enhanced hatha yoga intervention designed to reduce combat stress symptoms in deployed U.S. military personnel	Level I Randomized controlled study comparing sensory-enhanced Hatha yoga program to control (no treatment) 80 deployed military personnel recruited; 70 enrolled and completed study (intervention, $n = 35$; control, $n = 35$; 22 women, 48 men)	<ul style="list-style-type: none"> • AASP • State–Trait Anxiety Inventory • Quality of Life Survey 	The intervention group received 3 wk of 75 min sessions, 7 days/wk. The control group did not receive yoga. A statistically significant difference was found between groups in state and trait anxiety (reduction of stress was seen in the intervention group; $p = .001$). The intervention group reported higher levels of quality of life than the control group at a statistically significant level ($p = .001$). No difference was seen between groups on sensory processing ability.	Clear data lacking regarding length of deployment and combat exposure between groups. Short intervention duration No follow-up data collected. Skewed randomization of high-sensory-sensitivity participants to control group
Instrument Development and Testing					
Chang & Ailey (2013)	The MHRM assesses the level of recovery in adults with mental illness. The psychometric properties of the MHRM were initially established using classical test theory. This study's purpose was to evaluate the psychometric properties of the	Psychometric study designed to evaluate and revise the MHRM using Rasch analysis in 156 community-dwelling adults with mental illness $N = 107$ men, 49 women; M age = 47 yr, $SD = 11.10$ • Bipolar = 36%	MHRM	After initial analysis identifying problematic rating scale functioning and misfitting items, the MHRM was modified to a 26-item, 4-point Likert scale.	Participants, who had a high recovery status, may not have been representative of the larger population.

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Table 2. Evidence Table of 31 Occupational Therapy Mental Health Studies Published in the American Journal of Occupational Therapy, 2009–2011 (cont.)

Author and Year	Study Objectives	Level/Design/Participants	Intervention and Outcome Measures	Results	Study Limitations
	MHRM using Rasch analysis and revise the assessment as needed	<ul style="list-style-type: none"> • Schizophrenia = 25% • Major depression = 18% • Schizoaffective disorder = 16% 		<p>Unidimensionality was found, indicating that, after revision, all items measure a single construct.</p> <p>Proper rating scale function was also demonstrated after revision of the 5-point Likert scale to a 4-point scale.</p> <p>High reliability was demonstrated for the revised MHRM (Cronbach's $\alpha = .95$; person reliability = 0.92, person separation = 3.38, item reliability = 0.95, item separation = 4.22)</p>	
Chang, Helfrich, & Coster (2013)	To determine the reliability, convergent validity, and sensitivity to change of the PST with a sample of homeless participants. The PST measures ability to participate in ADLs and maintain housing.	<p>Study was part of a larger randomized controlled trial with outcomes measured at posttest after 3- to 12-wk intervention</p> <p>$M = 123$ homeless participants (intervention, $n = 96$; control, $n = 27$)</p>	<ul style="list-style-type: none"> • PST • ACLS • Impact of Event Scale–Revised (IES–R) 	<p>PST showed good internal consistency (Cronbach's $\alpha s > .70$). Convergent validity was established between the PST and the ACLS ($r > .40$, $p = .05$) but not the IES–R. The PST was sensitive to life skill change, but effect sizes were small (.11–.25).</p>	<p>Moderate sample size</p> <p>Sample may not be representative of larger population.</p>
Hancock, Bundy, Honey, James, & Tamssett (2011)	The Recovery Assessment Scale (RAS) assesses a person's point in the recovery process. The psychometric properties of the RAS were initially established using classical test theory. This study's purpose was to assess the reliability and internal validity of the RAS using Rasch analysis	<p>Psychometric study designed to evaluate and revise the RAS using Rasch analysis</p> <p>$N = 92$ adult participants of a clubhouse program with a diagnosis of mental illness (31 women, 61 men; ages 18–68; $M = 39$, $SD = 6.92$)</p> <ul style="list-style-type: none"> • Schizophrenia–schizoaffective disorder, $n = 51$ • Bipolar disorder, $n = 27$ • Depression, $n = 11$ • Anxiety disorder, $n = 3$ 		<p>After initial analysis identifying problematic rating scale functioning and misfitting items, the RAS was revised.</p> <p>After revision, all items demonstrated positive correlation with the overall measure (correlations ranged from .45–.76).</p> <p>Proper rating scale function was also demonstrated after revision of the 5-point Likert scale to a 3-point scale.</p> <p>Goodness of fit: After removal of 10 items, creating a 31-item scale, all items had acceptable fit.</p> <p>Internal reliability index = .94.</p>	<p>Participants may not be representative of the larger population of people with mental illness because they were active members of a clubhouse program in Australia. Clubhouse members are community-dwelling adults who may be at a higher recovery level than the larger population.</p>

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Table 2. Evidence Table of 31 Occupational Therapy Mental Health Studies Published in the American Journal of Occupational Therapy, 2009–2011 (cont.)

Author and Year	Study Objectives	Level/Design/Participants	Intervention and Outcome Measures	Results	Study Limitations
Rieke & Anderson (2009)	To evaluate the discriminant validity of the AASP and determine how the sensory profile of adults with obsessive-compulsive disorder (OCD) differs from that of the general population	Comparison design used to identify differences in Sensory Profile between 51 adults with OCD (12 men, 39 women; <i>M</i> age = 46, <i>SD</i> = 10.4, range = 18–62) and retrospective data collected on typically developing adults used to standardize the AASP (<i>N</i> = 757 typically developing adults)	AASP	The OCD group scored higher than the control group on low registration, sensory sensitivity, and sensation avoiding ($p < .05$). The OCD group scored lower than the control group on sensory seeking ($p < .05$). The AASP appears to be able to discriminate between adults with OCD and the general population.	The OCD group had comorbid disorders that may have confounded the results. Some members of the OCD group were taking medication, which may also have confounded the results. Demographic information (such as ethnicity, educational level, and socioeconomic status) and symptom severity were not collected from the OCD group, raising the concern that this sample may not have been representative of the larger population.
Simmons, Griswold, & Berg (2010)	The ESI assesses a person's social skills in the natural environment. This study's purpose was to assess internal scale validity, item skill hierarchy and intended purpose, and sensitivity (ability to discriminate between people with and without disabilities)	Psychometric study of ESI using Rasch analysis to assess 175 observations of 128 people ranging in age from 4 to 73 (72 men, 62 women) Analysis of ESI's ability to discriminate between people with and without disabilities <i>N</i> = 85 adults (<i>n</i> = 37 with disability; <i>n</i> = 48 with no disability)	ESI	Of 27 items, 24 demonstrated unidimensionality of the construct of social skill quality, indicating high internal scale validity. Analysis demonstrated a person separation reliability of .89 and an item separation reliability of .98. The ESI demonstrated high sensitivity in its ability to discriminate between people with and without disabilities, $t(83) = 4.468, p = .000$.	Small sample size Large participant age range Unclear whether gender, age, and culture influenced test performance.
Søndergaard & Fisher (2012)	To determine the sensitivity of the ESI with regard to its ability to discriminate quality of social interaction between people with and without neurologic or psychiatric disorders	Descriptive group comparison design using retrospective data to compare and differentiate participants' (<i>N</i> = 485) quality of social interaction • No diagnosis, <i>n</i> = 304 (90 men, 214 women) • Neurologic diagnosis, <i>n</i> = 77 (40 men, 37 women) • Psychiatric diagnosis, <i>n</i> = 104 (60 men, 44 women) • Age range = 16–69	ESI	The group with no identified diagnoses showed significantly higher quality of social interaction (Mann-Whitney $U = 3,172, p < .001$) than the group with neurologic or psychiatric disorders (Mann-Whitney $U = 3,189, p < .001$).	Groups were not matched on age and gender. Lack of information about the participants' functional level in life skills; groups may have been unequal in functional level in daily life skills.
Su, Tsai, Su, Tang, & Tsai (2011)	To evaluate the discriminant validity of the ACLS on adults with schizophrenia with ACLS scores of 4 and 5. The ACLS is used to assess	Cross-sectional correlational study designed to determine if participants with ACLS scores of 4 perform significantly worse than those with ACLS scores of 5	ACLS	The Level 5 group showed statistically significantly higher scores on processing speed, immediate and delayed verbal recall, and working	Unequal number of participants in each group

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Table 2. Evidence Table of 31 Occupational Therapy Mental Health Studies Published in the American Journal of Occupational Therapy, 2009–2011 (cont.)

Author and Year	Study Objectives	Level/Design/Participants	Intervention and Outcome Measures	Results	Study Limitations
	cognitive function in people with mental illness.	<p><i>N</i> = 76 participants with schizophrenia or schizoaffective disorder</p> <ul style="list-style-type: none"> Level 4 group: <i>n</i> = 35 (26 men, 9 women; <i>M</i> age = 37.83, <i>SD</i> = 10.25) Level 5 group: <i>n</i> = 41 (17 men, 24 women; <i>M</i> age = 37.73, <i>SD</i> = 9.28) 		<p>memory than the Level 4 group (<i>p</i> < .05).</p> <p>The ACLS was able to correctly classify 77.6% of participants as Level 4 or 5.</p> <p>No statistically significant differences were found between groups in visual memory and executive function.</p>	Unclear whether sample represented all people with schizophrenia classified at Levels 4 and 5
Efficiency					
Haertl, Behrens, Houtujec, Rue, & Ten Haken, (2009)	To determine the scope, satisfaction, and perceived efficacy of services in a free-standing community-based mental health occupational therapy clinic	<p>Mixed-method design (survey and interview) used to assess clients' and therapists' perceptions about the scope and efficacy of occupational therapy service at site.</p> <ul style="list-style-type: none"> 36 clients with severe mental illness who completed the survey (9 men, 25 women; ages 18–60). 9 therapists completed the survey; 6 were interviewed. 	<ul style="list-style-type: none"> Client and therapist surveys using 5-point Likert scale and open-ended questions Interview protocol for therapists 	<p>Clients reported high level of satisfaction with services and perceived that occupational therapy enhanced their independence and social comfort (mean response = 4 of 5).</p> <p>Both clients and therapists reported that individualized treatment and length of treatment duration contributed most to high level of satisfaction.</p> <p>Therapists also reported that their ability to work with clients in the community and provide follow-up evaluation and treatment contributed to the high level of job satisfaction and perceived efficacy.</p>	<p>Small sample size</p> <p>Unclear whether sample represented the larger population. No information provided about types of diagnoses or participants' functional level.</p> <p>Surveys had no established psychometric properties.</p>
Peloquin & Ciro (2013a)	To assess the engagement level and satisfaction of clients participating in a population-centered, life skills occupational therapy group for women in a residential facility for drug substance use	<p>Retrospective, cross-sectional analysis of 561 Likert-scale surveys completed anonymously postintervention</p> <p>Data collected over a 2-yr period.</p> <p>Women were ≥18 yr, lacked financial resources, and had drug or alcohol dependencies.</p> <p>Many had comorbid disorders such as depression, bipolar disorder, posttraumatic stress disorder, and schizophrenia</p>	<p>Paper-and-pencil 5-point Likert scale survey developed by Peloquin for this study.</p> <p>Questions focused on satisfaction with communication, problem solving, and life and work skills</p>	<p>97% of women either agreed or strongly agreed that they were satisfied with occupational therapy services.</p> <p>90%–95% of women agreed or strongly agreed that the group offered the opportunity to participate in desired life skills addressing communication, problem solving, and life and work skills.</p>	<p>Surveys had no established psychometric properties.</p> <p>Unclear whether the participants were representative of the larger population of women with substance use disorders. No demographic information was collected.</p> <p>Participant responses may have been biased by group members' attitudes and desire to please their therapist.</p>

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Table 2. Evidence Table of 31 Occupational Therapy Mental Health Studies Published in the American Journal of Occupational Therapy, 2009–2011 (cont.)

Author and Year	Study Objectives	Level/Design/Participants	Intervention and Outcome Measures	Results	Study Limitations
Peloquin & Ciro (2013b)	To assess the engagement level and satisfaction of clients participating in an occupational therapy self-development group for women in a residential facility for substance use	Retrospective, cross-sectional analysis of 1,488 Likert-scale surveys completed anonymously postintervention Data collected over a 4-yr period Women were ≥18 yr, lacked financial resources, and had drug or alcohol dependencies. Many had comorbid disorders such as depression, bipolar disorder, posttraumatic stress disorder, and schizophrenia	Paper-and-pencil 5-point Likert scale survey developed by Peloquin for this study	97% of women either agreed or strongly agreed that they were satisfied with occupational therapy services. Women reported positive changes in self-concept and improved life skills.	Surveys had no established psychometric properties. Unclear whether the participants were representative of the larger population of women with substance use disorders. No demographic information was collected.
Basic					
Helfrich, Chan, & Sabol (2011)	To determine cognitive predictors of life skill function in a group of adults with mental illness who have been homeless	Comparison of ACLS and PST in a group of adults who received life skills training and were evaluated at baseline and 1-, 3-, and 6-mo follow-up 58 participants enrolled; <i>N</i> = 39 adult participants with mental illness and history of homelessness completed the study	<ul style="list-style-type: none"> • ACLS • PST 	PST scores of participants who also had high ACLS scores increased significantly at each follow-up (food management, <i>p</i> = .021; money management, <i>p</i> = .039; safe community participation, <i>p</i> = .02).	Small sample size Participants represented a narrow range of cognitive levels. Lack of control and randomization Instruments had little or no established psychometric properties.
Kinnealey, Koenig, & Smith (2011)	To determine whether adults with and without sensory overresponsiveness (SOR) scored significantly differently on measures of depression, anxiety, health-related quality of life (HRQOL), and perceived social support	Participants were ages 18–60 and community dwelling SOR group, <i>n</i> = 14 Not-SOR (NSOR) group, <i>n</i> = 14; matched to SOR participants on age and gender	Two-group exploratory study <ul style="list-style-type: none"> • Adult Sensory Questionnaire • Medical Outcomes Study (MOS) Social Support Survey • Short Form-36 Health Survey, Version 2 • Beck Depression Inventory-II (BDI-II) • Beck Anxiety Inventory (BAI) 	A strong, significant relationship was found between SOR and anxiety (BAI; <i>r</i> = .66, <i>p</i> = .001). A strong, significant relationship was found between anxiety and depression (BAI and BDI-II; <i>r</i> = .70, <i>p</i> = .001). A moderate, significant, inverse relationship (<i>r</i> = -.53, <i>p</i> = .001) existed between MOS scores of perceived social support and anxiety (the lower the perceived social support, the higher the anxiety). A moderate significantly positive relationship was found between MOS scores and HRQOL (<i>r</i> = .40–.49)	Small sample size Unclear whether participants represented larger SOR and NSOR populations.
Odes et al. (2011)	To retrospectively analyze the effect of social, cognitive, and task-oriented	Retrospective chart review		Patients with a higher functional-level score at discharge were sig-	Small sample size

(Continued)

Table 2. Evidence Table of 31 Occupational Therapy Mental Health Studies Published in the American Journal of Occupational Therapy, 2009–2011 (cont.)

Author and Year	Study Objectives	Level/Design/Participants	Intervention and Outcome Measures	Results	Study Limitations
Painter et al. (2012)	function at discharge on the readmission rate of patients with schizophrenia	<i>N</i> = 71 adult patients with severe mental illness (37 men, 34 women; <i>M</i> age = 41.3, <i>SD</i> = 11.9) admitted to a closed psychiatric unit between 1999 and 2000 in Israel Hospital readmissions were followed up after initial discharge for 6.8 yr.	Comprehensive functional-level score assessing social, cognitive, and task-oriented behaviors	ificantly more likely to have lower readmission rates ($p < .05$). A higher functional-level score at discharge more accurately predicted readmission than the Brief Psychiatric Rating Score.	Lack of information about community treatment received once discharged
Painter et al. (2012)	To examine the relationship between fear of falling and depression, anxiety, and activity level	One-time home visits were made to a convenience sample of 99 community-living adults (aged ≥ 55) Participants were surveyed for fear of falling and depression and anxiety.	<ul style="list-style-type: none"> Survey of Activities and Fear of Falling in the Elderly Geriatric Depression Scale Hamilton Anxiety Scale 	Statistically significant relationships were found between fear of falling and depression, anxiety, and activity level. Activity level was inversely correlated with fear of falling.	Generalizability was limited by the small convenience sample. Findings may have been biased because participant data were based on self-report and recall of past events.
Plach & Haertlein Sells (2013)	To determine the occupational performance problems facing young U.S. veterans serving in Iraq and Afghanistan and develop occupational therapy directives for interventions	Mixed-method exploratory study using interview and survey <i>N</i> = 30 veterans who served in Operation Iraqi Freedom and Operation Enduring Freedom (26 men, 4 women; ages 20–29)	<ul style="list-style-type: none"> Canadian Occupational Performance Measure Primary Care PTSD Screen Brief Traumatic Brain Injury Screen Patent Health Questionnaire–9 Alcohol Use Disorders Identification Test 	The 5 most common occupational performance challenges were maintenance of relationships, school participation, physical health, sleep routines, and driving fitness. 77% of respondents screened positive for 1 of the following: PTSD, traumatic brain injury, major depression, and alcohol dependency.	Small sample size Majority of participants were White men.
Zimolag & Krupa (2009)	To examine the relationship between pet ownership and engagement in meaningful activity in community-dwelling adults with mental illness	Survey design <i>N</i> = 204 clients in 3 assertive community treatment teams who provided information about pet ownership; non-pet owners, <i>n</i> = 166 (81.4%); pet owners, <i>n</i> = 38 (18.6%). Of 36 available pet owners, 20 (55.5%) completed surveys. Of 153 non-pet owners, 40 (26.1%) completed surveys.	<ul style="list-style-type: none"> Engagement in Meaningful Activities Survey Global Assessment of Functioning Scale Psychological Community Integration Scale 	Pet owners had higher functioning ($z = -2.196, p \leq .05$, one-tailed) than non-pet owners. Pet owners scored higher on measures of meaningful engagement ($z = -1.949, p \leq .05$, one-tailed). No statistically significant difference existed between pet owner and non-pet owner measures of physical community engagement. Pet owners scored higher on measures of psychological community integration ($z = -2.073, p \leq .05$, one-tailed) and social community	Response bias found; more pet owners returned the survey.

(Continued)

Table 2. Evidence Table of 31 Occupational Therapy Mental Health Studies Published in the *American Journal of Occupational Therapy*, 2009–2011 (cont.)

Author and Year	Study Objectives	Level/Design/Participants	Intervention and Outcome Measures	Results	Study Limitations
Professional Issues					
Chaffey, Unsworth, & Fossey (2012)	To examine the relationship between intuition and emotional intelligence among occupational therapists in mental health practice	Survey design 400 surveys mailed to occupational therapists; 134 returned (response rate of 33.5%)	<ul style="list-style-type: none"> • Swinburne University Emotional Intelligence Test • Cognitive Style Index 	<p>A moderate relationship existed between intuitive cognitive style and emotional intelligence.</p> <p>Experienced therapists had higher scores on the use of emotional intelligence in the work environment and on intuitive cognitive style than did novices ($p < .05$).</p> <p>Use of intuition and emotional intelligence in the work place is associated with experience level and years of practice.</p>	<p>Gender distribution imbalance: 92% of respondents were female</p> <p>Moderately low survey return rate</p>
Harley & Schwartz (2013)	To examine how Phillip King Brown promoted occupational therapy in the rehabilitation of women with tuberculosis at Arequipa Sanatorium in the 1900s	Historical research Sources included the Arequipa Sanatorium Records accessed through the University of California, Berkeley, Bancroft Library (letters written by administrators and patients, in-house publications, patient files, photographs, public records, and annual reports).		<p>Brown formed Arequipa in 1911 as a unique health facility that would help marginalized women with tuberculosis to recover and enhance their lifestyles through health education and vocational trade training that would allow them to become fair wage earners.</p> <p>Brown was 1 of the first physicians in his era to consider the person, environment, and occupation as important in the rehabilitation process.</p>	<p>Most sources were written or cataloged by Arequipa Sanatorium administrators, who may have saved records that portrayed the facility in a favorable manner.</p>

Note. AASP = Adolescent/Adult Sensory Profile; ACLS = Allen Cognitive Level Screen; ADLs = activities of daily living; ASD = autism spectrum disorder; ESI = Evaluation of Social Interaction; IADLs = independent activities of daily living; M = mean; PST = Practical Skills Test; PTSD = posttraumatic stress disorder; SD = standard deviation.

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Suggested citation: Gutman, S. A., & Raphael-Greenfield, E. I. (2014). *Centennial Vision—Five years of mental health research in the American Journal of Occupational Therapy, 2009–2013*. *American Journal of Occupational Therapy, 68*, e21–e36. <http://dx.doi.org/10.5014/ajot.2014.010249>.

are unique assessments because they provide a personal voice to clients' lived experience—a component often missing from traditional symptom-based measures. The Evaluation of Social Skills is an observational rating scale that allows therapists to assess clients' social interaction performance in the context of natural environments and is perhaps the most ecologically valid of the six assessments. With the exception of the Evaluation of Social Skills and the Allen Cognitive Level Screen, the remaining five instruments are paper-and-pencil measures and do not truly assess clients as they directly engage in functional activities. The profession must develop more ecologically valid mental health instruments in which client occupational participation in real-life desired activities in the natural environment is assessed (see Table 2).

Mental Health Efficiency Studies

Only 3 (9.67%) of the 31 mental health articles published in *AJOT* between 2009 and 2013 addressed occupational therapy mental health practice efficiency (Haertl, Behrens, Houtujec, Rue, & Ten Haken, 2009; Peloquin & Ciro, 2013a, 2013b). *Efficiency* is an umbrella term that includes such components as cost and time efficiency, patient satisfaction, patient adherence, and safety. Although health care professionals must assess client satisfaction to provide the best possible client-centered care, only 3 client satisfaction studies were published in *AJOT* in the past 5 yr. These 3 studies addressed clients with severe mental illness in a free-standing community-based mental health occupational therapy clinic and women in a residential facility for substance abuse. No mental health studies published in *AJOT* between 2009 and 2013 addressed cost and time efficiency, patient adherence, or safety. Such research is needed to demonstrate that occupational therapy mental health interventions are not only effective and acceptable to patients, but also cost and time efficient and safe—critical patient care factors in a health care system that has become financially unmanageable and inaccessible to many (see Table 2).

Mental Health Basic Research Studies

Six (19.35%) of the 31 mental health studies published in *AJOT* between 2009 and 2013 were basic research studies that examined how mental health disabilities affect occupational participation. Helfrich, Chan, and Sabol (2011) examined predictors of life skill function in a group of adults with mental illness who had been homeless and found a strong relationship between cognitive performance and daily function. Kinnealey, Koenig, and Smith (2011) determined that adults with sensory overresponsiveness scored higher on measures of depression and anxiety than healthy controls. Odes et al. (2011) reported a strong inverse correlation among social, cognitive, and task-oriented function at discharge and readmission rates in adults with schizophrenia. Zimolag and Krupa (2009) found that community-dwelling adults with mental health disability who were pet owners were more likely to report higher levels of engagement in meaningful activities and community integration than non-pet owners. Painter et al. (2012) determined that fear of falling among a group of community-dwelling older adults was positively correlated to depression, anxiety, and activity restriction. In one of the first studies published in *AJOT* to assess the occupational performance needs of veterans returning from Iraq and Afghanistan, Plach and Haertlein Sells (2013) identified that 77% of respondents screened positively for posttraumatic stress disorder, traumatic brain injury, major depression, or alcohol dependency. The body of basic scientific knowledge produced by these researchers is important to better understand the occupational participation needs of traditional and nontraditional mental health populations and assist practitioners in the development of research-based interventions (see Table 2).

Mental Health Professional Issue Studies

Between 2009 and 2013, two *AJOT* articles addressed occupational therapy mental health professional issues. Chaffey,

Unsworth, and Fossey (2012) examined the relationship between intuition and emotional intelligence in mental health occupational therapists and found that experienced therapists demonstrated higher intuition and emotional intelligence scores than novice practitioners. Harley and Schwartz (2013) investigated the unique contributions to the occupational therapy profession made by Phillip King Brown, the medical director and founder of Arequipa Sanatorium for women with tuberculosis (TB) in the 1900s. In this novel historical research, Harley and Schwartz described how Brown used meaningful activity and vocational opportunities to help marginalized women recover from TB and enter trades and vocations that provided higher wages, sanitary work conditions, and a higher quality of life. Although Brown has not traditionally been considered a founder of the profession, his work clearly demonstrates that he was a pioneer physician who considered the person, environment, and occupation as important in the rehabilitation process.

Directions for Future Occupational Therapy Mental Health Practice and Research

With its centennial anniversary approaching in 2017, occupational therapy is a relatively young profession. Because of its age, it has not existed long enough to encounter the cyclical pendulum swings that characterize human history. We are currently witnessing the reemergence and reembracement of occupation-based therapy after several decades in which we abandoned our occupational roots in favor of a medical model approach. The reembracement of occupation-based therapy will be followed by a move to reintegrate mental health evaluation and practice into all areas of occupational therapy, including physical rehabilitation, pediatrics, geriatrics, and traditional and nontraditional mental health practice. The profession's reemergence as a valued health care provider of mental health services will be fueled by the larger society's recognition that emotional health is equally as important to a community's functioning as physical health and that emotional and physical health affect one another and

cannot be artificially separated, as has occurred in the present health care system over the past 60 yr or more. The splitting of emotional and physical health has similarly been adopted by occupational therapy education programs that must begin to integrate both into coursework. It is critical that health care practitioners regain the understanding that all illnesses, diseases, disorders, and injuries have both emotional and physical components that must be equally addressed to promote full healing. To separate emotional from physical health and to value one above the other is akin to treating the human being as a piece of insensate machinery on an assembly line. Many societal problems ranging from school shootings to homelessness have been, directly or indirectly, caused by our society's devaluing of emotional health.

A plethora of opportunities exist for occupational therapy practitioners and researchers to heal the split between emotional and physical health at the individual and community levels:

- All diagnoses that have been labeled as physical disabilities or illnesses have an emotional health component that is frequently unaddressed in the current health care and education systems. Educators must begin to teach students to identify and address the emotional health components of physical disabilities. Practitioners must seek ways to address clients' psychosocial concerns that accompany physical disability diagnoses. Researchers must conduct studies that document intervention outcomes equally addressing both emotional and physical health.
- A large percentage of children and youth in the school system have psychosocial deficits or behavioral management problems, engage in substance use, and are at risk for school dropout. Traditional school-based therapy must expand to address the psychosocial needs of children, youth, and parents. Researchers must examine how psychosocial problems affect school participation and conduct intervention studies that support the effectiveness of psychosocial occupational therapy services for children, youth, and families.

- An array of groups need transition services as they age out of care (e.g., young adults with autism spectrum disorders, developmental delay, learning disabilities, intellectual disabilities, traumatic brain injury, or mental health disabilities and foster care recipients). Occupational therapy practitioners often provide services to these groups in childhood but must begin to advocate for transition services to help these clients to, when young adults, secure supported employment, education, and residential living. Researchers must document the effectiveness of occupational therapy transition services for these groups.
- A high percentage of older adults experience depression and suicidal ideation; this percentage increases for those residing in nursing homes and assisted care facilities (National Institute of Mental Health, 2010). Although occupational therapy practitioners have traditionally provided this population with self-care and ADL assistance, the profession has not adequately addressed the evaluation and treatment of depression, despite training and availability of service reimbursement. Practitioners have a responsibility to better identify and treat depression in older adult clients, and researchers must become more involved in the generation of studies that assess occupational therapy intervention effectiveness in this area.
- Epidemic rates of homelessness now affect single adults, families, and children (National Coalition for the Homeless, 2009). Occupational therapy practitioners can help these populations learn the skills needed to transition from a shelter and maintain independent or supported residential housing. Children who are homeless need assistance to attain developmental, emotional, and sensorimotor skills. Research is needed to identify factors that aid individual and family transition to supported and sustained housing.
- Returning veterans and their families are challenged by posttraumatic stress disorder, depression, anxiety, adjustment disorder, and substance use. The

psychosocial challenges accompanying head injury, amputation, and spinal cord injury, although often overlooked, complicate the course of rehabilitation and adjustment and must be addressed to prevent further disability and role loss. Occupational therapy practitioners within and outside of the military must advocate for an expanded role beyond traditional rehabilitation service provision and help veterans to seek help despite fears of discrimination.

- People who have experienced natural disaster or terrorism need help adjusting to the trauma and rebuilding roles and daily life occupations. An unfortunate reality of our current society is that occupational therapy practitioners could be of great benefit to those needing to rebuild lives after such losses, upheaval, and violence. It would be unethical for the profession to withhold its skills in these circumstances because of a lack of funding. In such circumstances, as in many of those previously described, we may need to first demonstrate our proficiency and contribution before occupational therapy positions are routinely created. Such demonstration may be achieved through community volunteerism and student service learning opportunities supervised by faculty. Educators who have the responsibility of exposing students to emergent practice areas may be best positioned to lay the groundwork for occupational therapy practice expansion in many of the preceding areas.

If the profession undertook these practice changes through national and state advocacy, grassroots leadership, and change implemented at local and personal levels, occupational therapists would reemerge as valued mental health service providers within a decade. As society recognizes the problems caused by devaluing the mental health needs embedded in all health crises—whether physical or otherwise—consumers will demand true holistic health care in which emotional and physical health are addressed together. We can passively wait for this change or become an integral part of making this change happen. ▲

References

- American Occupational Therapy Association. (2009). *AOTA member participation survey overview report, May 2009*. Retrieved June 1, 2013, from www.aota.org/Governance/ProceduralAdHoc/Historical/Survey.aspx?FT=.pdf
- American Occupational Therapy Association. (2011). *Federal legislative issue updates, July 2011*. Retrieved June 1, 2013, from www.aota.org/Practitioners/Advocacy/Federal/Newsletter/Archives/2011/July11.aspx
- *Arbesman, M., & Logsdon, D. W. (2011). Occupational therapy interventions for employment and education for adults with serious mental illness: A systematic review. *American Journal of Occupational Therapy, 65*, 238–246. <http://dx.doi.org/10.5014/ajot.2011.001289>
- *Bendixen, R. M., Elder, J. H., Donaldson, S., Kairalla, J. A., Valcante, G., & Ferdig, R. E. (2011). Effects of a father-based in-home intervention on perceived stress and family dynamics in parents of children with autism. *American Journal of Occupational Therapy, 65*, 679–687. <http://dx.doi.org/10.5014/ajot.2011.001271>
- *Bullock, A., & Bannigan, K. (2011). Effectiveness of activity-based group work in community mental health: A systematic review. *American Journal of Occupational Therapy, 65*, 257–266. <http://dx.doi.org/10.5014/ajot.2011.001305>
- *Case-Smith, J. (2013). A systematic review of interventions to promote social emotional development in young children with or at risk for disability. *American Journal of Occupational Therapy, 67*, 395–404. <http://dx.doi.org/10.5014/ajot.2013.004713>
- *Chaffey, L., Unsworth, C. A., & Fossey, E. (2012). Relationship between intuition and emotional intelligence in occupational therapists in mental health practice. *American Journal of Occupational Therapy, 66*, 88–96. <http://dx.doi.org/10.5014/ajot.2012.001693>
- *Chan, A. S. M., Tsang, H. W. H., & Li, S. M. Y. (2009). A case report of integrated employment for an individual with severe mental illness. *American Journal of Occupational Therapy, 63*, 238–244. <http://dx.doi.org/10.5014/ajot.63.3.238>
- *Chang, F. H., Helfrich, C. A., & Coster, W. J. (2013). Psychometric properties of the Practical Skills Test (PST). *American Journal of Occupational Therapy, 67*, 246–253. <http://dx.doi.org/10.5014/ajot.2013.006627>
- *Chang, Y., & Ailey, S. H. (2013). Rasch analysis of the Mental Health Recovery Measure. *American Journal of Occupational Therapy, 67*, 469–477. <http://dx.doi.org/10.5014/ajot.2013.007492>
- *Chippendale, T., & Bear-Lehman, J. (2012). Effect of life review writing on depressive symptoms in older adults: A randomized controlled trial. *American Journal of Occupational Therapy, 66*, 438–446. <http://dx.doi.org/10.5014/ajot.2012.004291>
- *Edgelow, M., & Krupa, T. (2011). Randomized controlled pilot study of an occupational time-use intervention for people with serious mental illness. *American Journal of Occupational Therapy, 65*, 267–276. <http://dx.doi.org/10.5014/ajot.2011.001313>
- Fletcher, M. A., Barnes, Z., Broderick, G., & Klimas, N. G. (2012). Psychoneuroimmunology and natural killer cells: The chromium release whole blood assay. *Methods in Molecular Biology, 934*, 313–324. http://dx.doi.org/10.1007/978-1-62703-071-7_16
- *Gibson, R. W., D'Amico, M., Jaffe, L., & Arbesman, M. (2011). Occupational therapy interventions for recovery in the areas of community integration and normative life roles for adults with serious mental illness: A systematic review. *American Journal of Occupational Therapy, 65*, 247–256. <http://dx.doi.org/10.5014/ajot.2011.001297>
- Gutman, S. A. (2012). State of the journal, 2012. *American Journal of Occupational Therapy, 66*, 636–643. <http://dx.doi.org/10.5014/ajot.2012.006346>
- *Gutman, S. A., Kerner, R., Zombek, I., Dulek, J., & Ramsey, C. A. (2009). Supported education for adults with psychiatric disabilities: Effectiveness of an occupational therapy program. *American Journal of Occupational Therapy, 63*, 245–254. <http://dx.doi.org/10.5014/ajot.63.3.245>
- *Gutman, S. A., Raphael-Greenfield, E. I., & Rao, A. K. (2012). Effect of a motor-based role-play intervention on the social behaviors of adolescents with high-functioning autism: Multiple-baseline single-subject design. *American Journal of Occupational Therapy, 66*, 529–537. <http://dx.doi.org/10.5014/ajot.2012.003756>
- *Haertl, K., Behrens, K., Houtujec, J., Rue, A., & Ten Haken, R. (2009). Factors influencing satisfaction and efficacy of services at a free-standing psychiatric occupational therapy clinic. *American Journal of Occupational Therapy, 63*, 691–700. <http://dx.doi.org/10.5014/ajot.63.6.691>
- *Hancock, N., Bundy, A., Honey, A., James, G., & Tamsett, S. (2011). Improving measurement properties of the Recovery Assessment Scale (RAS) with Rasch analysis. *American Journal of Occupational Therapy, 65*, e77–e85. <http://dx.doi.org/10.5014/ajot.2011.001818>
- *Harley, L. D., & Schwartz, K. B. (2013). Philip King Brown and Arequipa Sanatorium: Occupation as medical and social treatment. *American Journal of Occupational Therapy, 67*, e11–e17. <http://dx.doi.org/10.5014/ajot.2013.005199>
- *Helfrich, C. A., Chan, D. V., & Sabol, P. (2011). Cognitive predictors of life skill intervention outcomes for adults with mental illness at risk for homelessness. *American Journal of Occupational Therapy, 65*, 277–286. <http://dx.doi.org/10.5014/ajot.2011.001321>
- *Katz, N., & Keren, N. (2011). Effectiveness of occupational goal intervention for clients with schizophrenia. *American Journal of Occupational Therapy, 65*, 287–296. <http://dx.doi.org/10.5014/ajot.2011.001347>
- Kiecolt-Glaser, J. K. (2009). Psychoneuroimmunology: Psychology's gateway to the biomedical future. *Perspectives on Psychological Science, 4*, 367–369. <http://dx.doi.org/10.1111/j.1745-6924.2009.01139.x>
- Kiecolt-Glaser, J. K. (2010). Stress, food, and inflammation: Psychoneuroimmunology and nutrition at the cutting edge. *Psychosomatic Medicine, 72*, 365–369. <http://dx.doi.org/10.1097/PSY.0b013e3181dbf489>
- *Kinnealey, M., Koenig, K. P., & Smith, S. (2011). Relationships among sensory modulation, social supports, and quality of life. *American Journal of Occupational Therapy, 65*, 320–327. <http://dx.doi.org/10.5014/ajot.2011.001370>
- *Lysack, C., Lichtenberg, P., & Schneider, B. (2011). Effect of a DVD intervention on therapists' mental health practices with older adults. *American Journal of Occupational Therapy, 65*, 297–305. <http://dx.doi.org/10.5014/ajot.2011.001354>
- Mark, T. L., Levit, K. R., Vandivort-Warren, R., Buck, J. A., & Coffey, R. M. (2011). Changes in US spending on mental health and substance abuse treatment, 1986–2005, and implications for policy. *Health Affairs, 30*, 284–292. <http://dx.doi.org/10.1377/hlthaff.2010.0765>
- National Coalition for the Homeless. (2009). *How many people experience homelessness?* Retrieved from www.nationalhomeless.org/factsheets/How_Many.html
- National Institute of Mental Health. (2010). Older adults: Depression and suicide facts. Retrieved June 1, 2013, from www.nimh.nih.gov/health/publications/older-adults-

*Denotes studies that were systematically reviewed for this article.

depression-and-suicide-facts-fact-sheet/index.shtml

- *Odes, H., Katz, N., Noter, E., Shamir, Y., Weizman, A., & Valevski, A. (2011). Level of function at discharge as a predictor of readmission among inpatients with schizophrenia. *American Journal of Occupational Therapy, 65*, 314–319. <http://dx.doi.org/10.5014/ajot.2011.001362>
- *Painter, J. A., Allison, L., Dhingra, P., Daughtery, J., Cogdill, K., & Trujillo, L. G. (2012). Fear of falling and its relationship with anxiety, depression, and activity engagement among community-dwelling older adults. *American Journal of Occupational Therapy, 66*, 169–176. <http://dx.doi.org/10.5014/ajot.2012.002535>
- Patzkowski, J. C., Rivera, J. C., Ficke, J. R., & Wenke, J. C. (2012). The changing face of disability in the US Army: The Operation Enduring Freedom and Operation Iraqi Freedom effect. *Journal of the American Academy of Orthopaedic Surgeons, 20* (Suppl. 1), S23–S30. <http://dx.doi.org/10.5435/JAAOS-20-08-S23>
- *Peloquin, S. M., & Ciro, C. A. (2013a). Population-centered life skills groups: Perceptions of satisfaction and engagement. *American Journal of Occupational Therapy, 67*, 82–90. <http://dx.doi.org/10.5014/ajot.2013.004796>
- *Peloquin, S. M., & Ciro, C. A. (2013b). Self-development groups among women in recovery: Client perceptions of satisfaction and engagement. *American Journal of Occupational Therapy, 67*, 82–90. <http://dx.doi.org/10.5014/ajot.2013.004796>
- *Plach, H. L., & Haertlein Sells, C. (2013). Occupational performance needs of young veterans. *American Journal of Occupational Therapy, 67*, 73–81. <http://dx.doi.org/10.5014/ajot.2013.003871>
- *Rieke, E. F., & Anderson, D. (2009). Adolescent/Adult Sensory Profile and obsessive-compulsive disorder. *American Journal of Occupational Therapy, 63*, 138–145. <http://dx.doi.org/10.5014/ajot.63.2.138>
- *Simmons, C. D., Griswold, L. A., & Berg, B. (2010). Evaluation of social interaction during occupational engagement. *American Journal of Occupational Therapy, 64*, 10–17. <http://dx.doi.org/10.5014/ajot.64.1.10>
- *Søndergaard, M., & Fisher, A. (2012). Sensitivity of the Evaluation of Social Interaction Measures among well persons and persons with neurological or psychiatric disorders. *American Journal of Occupational Therapy, 66*, 356–362. <http://dx.doi.org/10.5014/ajot.2012.003582>
- *Stoller, C. C., Greuel, J. H., Cimini, L. S., Fowler, M. S., & Koomar, J. A. (2012). The effect of yoga on symptoms of combat stress in deployed military personnel. *American Journal of Occupational Therapy, 66*, 59–68. <http://dx.doi.org/10.5014/ajot.2012.001230>
- *Su, C. Y., Tsai, P. C., Su, W. L., Tang, T. C., & Tsai, A. Y. (2011). Cognitive profile difference between Allen Cognitive Levels 4 and 5 in schizophrenia. *American Journal of Occupational Therapy, 65*, 453–461. <http://dx.doi.org/10.5014/ajot.2011.000711>
- World Federation of Occupational Therapists. (2011). *Mental health initiative*. Retrieved from www.wfot.org/groups/worldhealthorganisationwho.aspx
- *Zimolag, U., & Krupa, T. (2009). Pet ownership as a meaningful community occupation for people with serious mental illness. *American Journal of Occupational Therapy, 63*, 126–137. <http://dx.doi.org/10.5014/ajot.63.2.126>